THE VETERINARY RECORD

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S., 1888

No. 30. JULY 28, 1951 VOL. 63.

ENZOOTIC ABORTION IN EWES

Some Aspects of Infection and Resistance

BY

A. D. McEWEN, ANNIE I. LITTLEJOHN AND ANGUS FOGGIE,

ANIMAL DISEASES RESEARCH ASSOCIATION, MOREDUN INSTITUTE, EDINBURGH

The enzootic abortion of ewes occurring in lowland flocks in the south-east of Scotland and elsewhere is now known to be caused by a virus showing similarity to those of the psittacosis lymphogranuloma group (Stamp *et al.*, 1950; Stamp, 1951; Francis, 1951). The foetal membranes were found to be the only tissues susceptible to injury by the virus and ewes with infected membranes either aborted or gave birth to weak or apparently normal lambs. The virus is present in great quantity in the diseased membranes and it may be found in the uterine discharge for a few days after and occasionally before abortion or lambing. As far as is known at present, the infected foetal membranes and the discharges are the only sources of dissemination of the virus.

It was shown that under experimental conditions ewes may be protected by the injection of a formalinised vaccine, either before or after service, against subsequent artificial infection, and in the field it appeared that vaccination shortly before service (*i.e.*, in September) significantly reduced the incidence of abortion in the following lambing season (McEwen *et al.*, 1951). From this field result it might be inferred that the naturally occurring infection takes place during pregnancy, but there is evidence to suggest that this is not the case. When ewes from an abortion-free district have been introduced in the autumn before service into a known infected flock, or when ewes from an infected area have been brought into a flock hitherto free from the disease, abortions have not occurred in the originally non-infected ewes at the first lambing after the mixing of the two groups, even though the incidence of abortion amongst the originally infected ewes may have been high at that lambing.

In the majority of flocks, abortions occur only in the three or four weeks preceding the start of the lambing month, and as the time required to produce abortion is at least five weeks by parenteral and seven weeks by oral administration of the virus, it seems unlikely that abortion could occur, even in the latest lambing ewes, as the result of infection from a ewe aborting earlier in the season. It is probable that when a ewe or a ewe lamb is exposed to natural infection during the lambing season the virus produces no immediately apparent effect, but remains latent until the following pregnancy, when it may invade and multiply in the foetal membranes, leading to abortion.

The recorded reduction in the incidence of abortion at the first lambing season following vaccination may, therefore, have been caused by the stimulation of an immunity that enabled the body to overcome or sequester the latent virus, thus preventing the invasion of the foetal membranes.

In 1950-51 experiments were made for the purpose of throwing further light on the epidemiology of the disease and the results that might be expected to follow vaccination of infected flocks. These experiments were designed (1) to demonstrate the persistence of the virus in the tissues of non-pregnant sheep; (2) to explore the possibility that lambs exposed to a field infection at or soon after birth might harbour the virus and later abort or lamb with infected foetal membranes; (3) to examine the possibility that the vaccination before service of experimentally infected sheep might reduce the incidence of disease of the foetal membranes, and (4) to compare the infectivity of a large with that of a small dose of virus. This comparison was made because in previous experiments (McEwen *et al.*, 1951) where pregnant ewes were inoculated with two differently sized doses of infective material, the infectivity of the smaller dose was found to be equal to or greater than that of the larger.

EXPERIMENTAL

1. THE DEMONSTRATION OF VIRUS IN THE TISSUES OF INOCULATED, NON-PREGNANT SHEEP

Twelve ewe lambs, all less than two weeks old, were inoculated intravenously with 1 ml. of a 1 : 100,000 dilution of infected egg yolk sac. On the same day six ewe hoggs (*i.e.*, year-old sheep) were inoculated in the same way and with the same dose, and three with 1 ml. of a 1 : 1,000 dilution of the same material.

The lambs and hoggs were slaughtered two to three months after inoculation and the following tissues were collected: liver, spleen, lymph nodes*, bone marrow, and uterine mucosa. The tissues were preserved at -70° C. until all the animals had been slaughtered, when approximately equal quantities of each kind of tissue were pooled, the tissues from the lambs and hoggs being kept separate. Ten per cent. fine suspensions of the tissues were lightly centrifuged and the supernatants inoculated both subcutaneously and intravenously in 5 ml. quantities into pregnant sheep.

The results of these inoculations are shown in Table I. Abortion occurred in two ewes inoculated with spleen tissue and one inoculated with lymph node tissue, the first abortion occurring eight weeks after inoculation and the last 14 days later. The remaining ewes lambed normally. Seven of these, however, had lambs with infected foetal membranes. In six cases the lesions were inconspicuous, not more than one or two cotyledons showing small areas of necrosis that could be found only after careful examination.

* Prescapular, axillary, precrural, bronchial, anterior part of mediastinal, and internal iliac.

TABLE I

THE INFECTIVITY FOR PREGNANT EWES OF TISSUES FROM INOCULATED LAMBS AND HOGGS

Tissue	10 per cent. suspensions of tissues from young lambs inoculated during the first two weeks of life			10 per cent. suspensions of tissues from hoggs inoculated when one year old		
	Number of pregnant ewes inoculated	Number aborted with infected membranes	Number lambed with infected membranes	Number of pregnant ewes inoculated	Number aborted with infected membranes	Number lambed with infected membranes
Liver	10	—	1	10	—	—
Spleen	10	2	—	9	—	1
Lymph nodes	10	1	—	10	—	3
Bone marrow	9	—	—	8	—	1
Uterine mucosa	8	—	1	9	—	—

The foetal membranes were examined from 82 of the ewes; in the eleven remaining cases they were lost, vaginal swabs being examined instead.

The seventh set of foetal membranes showed no macroscopic lesions, but a few groups of elementary bodies were found in smears made from the cotyledons. The seven infected ewes lambed between the 32nd and 48th day after the occurrence of the first abortion. At that time 58 of the ewes were housed together in a covered yard. This group included the three ewes that aborted and all seven of the ewes that later were found to be lightly infected. The remaining 35 ewes were housed separately and none of them was found to be infected at lambing. The very slight lesions of the membranes where the lambing was normal suggest that these ewes acquired the infection from those that aborted and not from the inoculation. The experiment shows that the virus had persisted for two to three months in the spleen and body lymph nodes of the young lambs, but it fails to show that a latent infection may persist for a similar time in the tissue of year-old sheep. The results of the experiment also suggest that pregnant ewes infected from their fellows five to six weeks before lambing will lamb normally.

2. LATENT INFECTION IN VIRGIN EWES

The fact that enzootic abortion occurs in gimmers (*i.e.*, ewes lambing for the first time at two years old) indicates that natural infection of the virgin animal can occur. There are two occasions upon which such animals may be exposed to a heavy infection: (*a*) before, at or soon after birth and (*b*) at approximately 12 months old, owing to the common practice of allowing ewes that have aborted and are not suckling a foster lamb to run with the ewe hoggs.

To obtain evidence on the possibility of infection occurring from source (*a*), 20 cross-Suffolk or cross-Oxford ewe lambs from each of five heavily infected Border flocks were collected in September, 1950, and placed in a field of new grass a few miles from the Institute. A grain crop had been taken from the field a few weeks previously, since when it had not been grazed. Moreover, the field belonged to a farm where breeding sheep were not kept and was in a district where enzootic abortion was unknown. When approximately eight months old, the lambs (now hoggs) were served so that their lambing dates extended from April 20th to May 8th, 1951. On March 20th they were brought to the Institute and kept for five days in a field that had been free from sheep all winter and on March 26th they were moved into buildings with cement floors and walls, which had been thoroughly cleaned and disinfected for their reception.

TABLE II

THE BREEDING HISTORIES OF EWE LAMBS BORN IN INFECTED FLOCKS IN THE SPRING OF 1950, REMOVED TO A NON-INFECTED AREA IN SEPTEMBER, AND SERVED WHEN APPROXIMATELY EIGHT MONTHS OLD.

Total number of pregnant animals*	Number and percentage that aborted and had infected membranes	Number and percentage that lambed and had infected membranes	Total number and percentage with infected membranes
83	6–(7%)	22–(27%)	28–(34%)

Note.—The foetal membranes from 76 of the hoggs were found and examined microscopically. In the seven cases where the foetal membranes were lost a diagnosis was made from the microscopical examination of vaginal swabs.

* Owing to the necessity for confining lambing to a limited period, the total number of ewes becoming pregnant was less than the number of animals entering the experiment.

The results of the experiment are shown in Table II. Six of 83 pregnancies terminated in abortion and 22 of the ewes that lambed were found to be infected.

Controls from an area where enzootic abortion does not occur could not be included in the experiment as a check on the possibility of infection reaching the animals from some outside source during the period from September, 1950, to parturition. This was unfortunate as the animals had to be shepherded and fed throughout the winter by Institute staff and thus there is the possibility that a mechanical transfer of infection may have occurred; but as this is considered unlikely in the circumstances, the relatively high rate of abortion and infection of the foetal membranes is attributed to a latent infection present when the lambs were purchased in September. Final proof of the hypothesis that infection acquired early in life may cause infection of the foetal membranes at pregnancy must await experiments made under conditions that eliminate the possibility of accidental infection. Assuming that the lambs were carrying a latent infection in September, it is interesting to speculate on whether the incidence of infection would have been significantly lower had the animals

been kept for another year and served for the first time when gimmers.

The 22 infected animals that carried their lambs to term showed many degrees of disease, the lesions varying from an inconspicuous area of necrosis and corrugation affecting only a small part of one cotyledon and the immediately adjacent chorion, to a thickening and corrugation of several square inches of the chorion, involving seven or eight associated cotyledons, with smaller foci in other parts of the membrane. In many cases the lambs were normal, or even above the flock average in size and vigour, but four of the infected sheep had lambs that died from a few hours to four days after birth, and one had both a strong living lamb and a dead degenerating twin. Apart from the cases of actual abortion, there was no relationship between the health of the lamb and the extent of the lesions. Amongst the 55 sheep that lambed with non-infected membranes, there were only four weak lambs, none of which died.

The birth of weak, full-term lambs and of one living and one dead lamb has already been described (Littlejohn, 1950) as one of the features of the clinical disease, but owing to the impracticability of obtaining foetal membranes in the field from ewes that give birth to apparently normal lambs, the incidence of infection among such ewes is not known. It is therefore impossible to compare the incidence of disease described above with that occurring in gimmers under field conditions.

3. The Vaccination of Infected Ewes

On July 4th, 1950, 100 Blackface gimmers were divided into two groups, A and B; those in Group A were inoculated intravenously with a " large " infective dose of virus, *i.e.*, 1 ml. of a 1 : 1,000 suspension of infected egg yolk sac, and those in Group B with a " small " infective dose, *i.e.*, 1 ml. of a 1 : 100,000 suspension of the same material. On September 8th and again on September 22nd half of the sheep in each group were injected with formalinised vaccine. They were all served in October, the service dates for each sheep being recorded to within two to six days. Those animals that did not abort were slaughtered a few days before they were due to lamb and the foetal membranes were examined for lesions and the presence of virus. The results of the experiment are summarised in Table III. Vaccination had no significant effect on the incidence of infection in the ewes inoculated with the " large " infective dose, but in the ewes inoculated with the " small " infective dose there is a significantly smaller number of infections in the vaccinated group than in the control group. $\chi^2 = 5{\cdot}18$. P = 0·05 to 0·02.

4. The Relative Infectivity of a " Large " and a " Small " Infective Dose of Virus

In experiments previously recorded (McEwen *et al.*, 1951) and also in unpublished tests of the immunising properties of vaccine, groups of control sheep were inoculated during pregnancy with the equivalent of 1 ml. of 1 : 1,000 and 1 : 100,000 dilutions of egg yolk sac culture of Strain 22. The results are summarised in Table IV, experiments A, B and C. In each case the small infective dose (*i.e.*, 1 : 100,000) produced a greater number of infections than the large infective dose, but the differences are not significant.

In the previous experiment (Table III) the control sheep provide a comparison of the effects of a " large " and a " small " infective dose inoculated before pregnancy. In this experiment, which is summarised in experiment D, Table IV, the number of infections produced by the " small " infective dose is significantly greater than the number produced by the " large " infective dose. $\chi^2 = 5{\cdot}749$. P = 0·02 to 0·01.

Table III

The Vaccination of Infected Sheep

Group A. Ewes inoculated with a large infective dose before service

	Pregnant ewes			Foetal membranes: Microscopic lesions					Foetal membranes: Smears	
	No.‡	Slaughtered	Aborted	++++	+++	++	+	—	+	—
Vaccinated	21	19			1				1	
						3			3	
								15		15
			2	1					1	
								1		1
	21	19	2	1	1	3	—	16	5	16
Not vaccinated	21	18				2			2	
							1		1	
								15		15
			3	1					1	
								2		2
	21	18	3	1	—	2	1	17	4	17

Group B. Ewes inoculated with a small infective dose before service.

	Pregnant ewes			Foetal membranes: Microscopic lesions					Foetal membranes: Smears	
	No.‡	Slaughtered	Aborted	++++	+++	++	+	—	+	—
Vaccinated	20	19					3		3	
								16		16
			1	1					1	
	20	19	1	1	—	—	3	16	4	16
Not vaccinated	22	20		3					3	
					1				1	
						5			5	
					•			11	1	10
			2	1 (one lost)*					2	
	22	20	2	5	1	5	—	11	12	10

++++ = Gross macroscopic lesions throughout both cornua.
+++ = Gross macroscopic lesions involving approximately half the total number of cotyledons and associated areas of chorion.
++ = Gross macroscopic lesions involving only a few cotyledons and adjacent areas of chorion.
\+ = Slight macroscopic lesions involving one or two cotyledons often with no involvement of chorion.
* = As the vaginal smear was positive it was assumed that the membrane would have fallen into the ++++ category.
‡ = See footnote to Table II.

TABLE IV

A COMPARISON OF A LARGE WITH A SMALL INFECTIVE DOSE

	Large dose			Small dose		
	No. of ewes	No. infected	No. not infected	No. of ewes	No. infected	No. not infected
Experiment A Inoculated subcutaneously during pregnancy ...	6	5	1	6	6	0
Experiment B Inoculated subcutaneously during pregnancy ...	11	6	5	11	9	2
Experiment C Inoculated subcutaneously during pregnancy ...	9	8	1	11	10	1
Experiment D Inoculated intravenously before pregnancy ...	21	4	17	22	12	10
Totals	47	23	24	50	37	13

No explanation for the greater infectivity of the smaller dose of virus can be given, but it is possible that the larger dose by virtue of the greater quantity of virus—a virus of low pathogenicity for all tissues except the foetal membranes—may stimulate an immunity more effectively or more consistently than does the smaller, enabling the tissues to destroy or sequester the virus and thereby preventing invasion of the foetal membranes. The phenomenon may be another example of "auto-interference."

SUMMARY

1. The virus of ovine abortion has been shown to persist for at least two months in the bodies of lambs inoculated intravenously when less than 14 days old with a suspension of infective egg yolk sac.

2. Ewe lambs born in infected flocks and moved to non-infected pastures in September were served when approximately eight months old. Seven per cent. of the animals aborted and 27 per cent. lambed with infected foetal membranes.

3. In ewes infected with a small dose of virus before pregnancy, subsequent vaccination significantly reduced the incidence of infection of the foetal membranes.

4. The infectivity of a small dose of virus has been found to be equal to or greater than that of a dose 100 times larger.

REFERENCES

FRANCIS, J. (1951.) Personal communication.
LITTLEJOHN, ANNIE I. (1950.) *Vet. Rec.* **62.** 571.
MCEWEN, A. D., STAMP, J. T., LITTLEJOHN, ANNIE I. (1951.) *Ibid.* **63.** 197.
STAMP, J. T. (1951.) In press.
———, MCEWEN, A. D., WATT, J. A. A., & NISBET, D. I. (1950.) *Vet. Rec.* **62.** 251.

WEEKLY WISDOM

Governments—all Governments—should keep their hands off the news.—MR. CHRISTOPHER CHANCELLOR, General Manager of Reuters.

JOHNE'S DISEASE IN NORTH-WEST ENGLAND

BY

M. A. SOLTYS,

DEPARTMENT OF VETERINARY PATHOLOGY,
UNIVERSITY OF LIVERPOOL

In a recent survey of Johne's disease, Doyle and Spears (1951) have drawn attention to the lack of recent information on the distribution of this condition and have provided valuable figures on its incidence in many parts of the country based on the microscopical examination of samples of faeces sent in by veterinary surgeons. They point out that in 1932 Gaiger had estimated that most farms in Lancashire and Cheshire were affected and evidence from other sources suggested that the disease was responsible for very heavy annual losses. They also discuss the possibility that certain changes in methods of animal husbandry, particularly those introduced during the war, may have affected the incidence of Johne's disease.

The total number of specimens examined at Weybridge was 3,815, of which 976 (25 per cent.) were positive, 739 (19 per cent.) suspicious and 2,096 (54 per cent.) negative. It would appear from the map showing the distribution of infected farms in Great Britain that a higher proportion of the samples they received came from the southern half of the country. They point out that their information is incomplete since many more samples were received from some counties than from others and only a few from some areas in which the disease was known to be prevalent.

Attention may be drawn to the absence of any recorded outbreaks in Cheshire. In this county intensive dairying still forms a major part of farming, and it would seem unlikely that any far-reaching changes have been introduced which would result in a dramatic fall in the incidence of Johne's disease which certainly in 1932 was very widespread. The present brief report has therefore been drawn up with the object of supplementing the interesting figures supplied by Doyle and Spears and providing further information on the position in the north-western area in particular.

The data which cover the period 1947-50, like those of Doyle and Spears, give only a partial picture of the distribution of infected centres. At the same time it is believed that a high proportion of samples of faeces, which practitioners in the neighbouring counties have collected for microscopical examination, have been sent to this laboratory: this would account for the relatively small number received at Weybridge.

All samples were forwarded to the laboratory for routine microscopical examination. The procedure adopted, which in effect is almost identical with that advocated by Doyle and Spears, is as follows:—

If the faeces are fluid, direct smears are made, but if they are not, a little water is added. After smears have been fixed they are stained by the Ziehl-Neelsen method and examined under oil immersion objective for a period of five to ten minutes. The finding of a minimum of five acid-fast bacilli resembling Johne's bacilli in a group has been considered positive. If only single acid-fast bacilli were present the sample has been considered as suspicious. If no acid-fasts resembling Johne's bacilli are found the sample has been reported as negative with the remark that a negative result does not exclude Johne's disease.

RESULTS OF THE EXAMINATION OF FAECES SAMPLES FOR JOHNE'S DISEASE FOR THE PERIOD 1947/1950

Counties	1947			1948			1949			1950			Total number for four years		
	Pos.	Sus.	Neg.	Pos.	Sus.	Neg.	Pos.	Sus.	Neg.	Pos.	Sus.	Neg.	Pos.	Sus.	Neg.
Cheshire	2	1	3	16	8	18	11	4	28	34	14	46	63	27	95
Cumberland	7	6	11	15	8	23	26	3	24	30	20	38	78	37	96
Denbigh	—	—	—	2	0	3	5	3	9	4	1	10	11	4	22
Lancashire	2	1	3	5	1	6	6	1	12	11	8	29	24	11	50
Leicestershire	1	3	0	4	1	1	3	0	2	0	0	1	8	4	4
Northants	7	3	5	3	3	10	15	4	17	15	4	26	40	14	58
Shropshire	4	1	5	4	2	2	11	2	10	19	9	26	38	14	43
Warwickshire	10	6	13	9	6	21	10	9	22	8	0	11	37	21	67
Yorkshire	0	0	1	2	1	5	1	0	3	0	1	10	3	2	19
Other counties	8	2	14	8	8	21	0	0	6	10	2	19	26	12	60
										Totals	...	...	328	146	514

Many attempts have been made to improve the chances of detecting the organisms of Johne's disease by various concentration methods used for the detection of the tubercle bacillus, such as the antiformin method described by Uhlenhuth and Xylander (1909), the flotation method used by Lange and Nitsche (1909) and a modification introduced by Smith (1938). None of these methods has led to any substantial improvement over the direct smear of faeces. It has not been possible to combine the microscopical examination of the faeces with the isolation of the organism in culture. However, in view of the delay of several weeks and sometimes even months before results can be obtained, there would appear to be every justification for relying upon the direct microscopy. Our findings during the last four years are shown in the table.

Of 988 samples of bovine faeces which were examined during the last four years 328 were positive, 146 suspicious and 514 negative.

Cumberland, Cheshire and Northamptonshire were the counties from which the largest number of samples were received. They are also the counties showing the highest percentage of positive cases.

Discussion

There are indications that Johne's disease is more prevalent than formerly was believed. It is difficult to determine whether there has been an actual increase in the incidence of the disease or whether, as a result of the measures taken to reduce tuberculosis and contagious abortion, cases which formerly may have passed unrecognised are now being revealed.

The clinical diagnosis of the disease is not always straightforward, and any procedures which will aid the practitioner in reaching a decision are of value. Of recent years there has been an increasing tendency to send samples of faeces from suspected cases to laboratories, and the confirmation of the tentative diagnosis by the detection of the bacilli would appear to be of some assistance.

Although the finding of Johne's bacilli in faeces is helpful in the diagnosis of the symptomatic cases and in the survey of the incidence of the disease in an area, it does not help in the eradication and control of the disease because the symptomless carriers are ignored, although they are potential spreaders of infection.

Summary

During the years 1947 to 1950 the microscopical examination for Johne's bacilli of 988 samples of bovine faeces received mainly from north-west counties and part of the Midlands revealed 328 (33 per cent.) positive cases, 146 (15 per cent.) suspicious and 514 (52 per cent.) negative cases. It is hoped that these figures are of value in supplementing those recently published by Doyle and Spears.

References

Doyle, T. M., & Spears, H. N. (1951.) *Vet. Rec.* **63.** 355.
Gaiger, S. H. (1932.) *Ibid.* **12.** 263.
Lange & Nitsche. (1909.) *Dtsch. med. Wschr.* **36.** 1987.
Smith, C. R. (1938.) *Amer. Rev. Tuberc.* **37.** 525.
———. *Ibid.* **38.** 57.
Uhlenhuth & Xylander. (1909.) *Med. Klin. Berl.* **5.** 1296.

ARTIFICIAL INSEMINATION IN THE NETHERLANDS

"The practice of artificial insemination is rapidly spreading in the Netherlands," states the *Scottish Farmer* in its issue of June 3rd, and continues: "By comparison with a round figure of 20,000 head in 1946 the latest figures available are over 400,000. Punctual records are made of the inseminations accomplished. That is possible because a large number of farmers have joined a Herd Book Society. The inseminator can always convince himself on the spot which cow is inseminated by him, as a number is burned into a horn of each cow. In any other case a sketch of the cow must be produced on insemination. At the end of each year all affiliates are visited to collect correct data on the conceptions of the cows. The conception rate is published in the annual report of a committee appointed by the Government and consisting of farmers, veterinary surgeons, and livestock breeding experts. The A.I. societies are at liberty to buy their bulls provided they comply with imposed minimum requirements. The A.I. bulls, before being eligible as such, are examined on their fertilising capacity.

"An interesting point is that in the Netherlands A.I. is only allowed on co-operative lines. The Association requires a licence of the Ministry of Agriculture, Fisheries and Food. The aim is to establish A.I. societies each covering a limited area with a radius of from 10 to 15 kms. Some stations now cover a much larger district but this has its disadvantages. The Netherlands Government has established several committees to ensure an effective development of artificial insemination. In the first place there is the Central Supervisory Committee on A.I., consisting of farmers, livestock breeding experts, and veterinary surgeons, a civil servant acting as Chairman. The Government grants subsidies to the societies. The grants will be more substantial if a larger number of smallholders have joined an A.I. society. The subsidies, however, are granted only for one year at a time. If it is essential that an A.I. society proceeds in establishing an A.I. station with a laboratory, the Government are empowered to contribute to the costs, if found opportune."

CLINICAL COMMUNICATION

A NOTE ON THE TREATMENT OF KETOSIS IN MILK COWS WITH AMMONIUM LACTATE

PROFESSOR L. SEEKLES, D.SC.

DIRECTOR, THE LABORATORY OF VETERINARY BIOCHEMISTRY, UTRECHT UNIVERSITY, UTRECHT (THE NETHERLANDS)

Two basic ideas have led to the ammonium lactate therapy, *viz.*, (1) the coincidence of ketosis in milk cows with fatty infiltration and degeneration of the liver and (2) the dependence of normal functioning of the liver upon a normal ratio of glycogen and fat. Since 1941 we have been carrying out investigations for the purpose of improving the abnormal ratio of glycogen and fat in the liver in cases of ketosis. In this way we succeeded in improving the functioning of the liver with regard to the oxidation of ketone bodies. Ammonium lactate is one of the drugs used successfully for this purpose. Brief mention of this already has been made in the second Fison lecture for the Animal Health Trust in 1948.[1]

Since 1942 a considerable experience has been gained in the Netherlands concerning the treatment of ketosis in cattle with ammonium lactate. This therapy is a physiological one because it is based on a synthesis of glycogen in the liver brought about by conversion of lactate originating from the gastro-intestinal tract. Whilst more work must be done on this preparation, I feel that this preliminary note will be beneficial.

DOSAGE AND APPLICATION

The drug is administered by mouth *twice a day*, in the morning and in the evening, each time in a quantity of 120 grammes (about 4 oz.) of commercial ammonium lactate at a strength of approximately 80 to 85 per cent. The drug has to be diluted with about a pint of water prior to administration or it may be mixed with other materials and pressed to cakes. The administration of ammonium lactate is continued for at least five days and in persistent cases of ketosis even for a few days more. Checking ketone bodies in the urine, *e.g.*, by the Legal or the Rothera test, after six days is advisable.

Delivery of the drug in five bottles each containing a day's dose of 240 grammes (about 8 oz.)—to be divided by the owner into two equal quantities prior to administration—decreases the danger of too severe a laxation due to overdosing. In the normal dose mentioned ammonium lactate has a weakly laxative action, therefore it acts favourably in cases of ketosis showing constipation. Dysfunctioning of the gastro-intestinal tract, especially the rumen, may be an important factor in the pathogenesis of ketosis. It should be treated if necessary.

If the strength of commercial ammonium lactate is lower than 80 to 85 per cent. the quantity of the dilute drug to be given has to be increased accordingly. So the practitioner should be certain about the strength of the drug.

RESULTS

Ammonium lactate is not effective in all cases of ketosis any more than are the usual and the newly tried drugs which may act favourably as far as the elimination of ketone bodies from the tissues is concerned. However, since 1942 lactate therapy has been practised in numerous cases, as a rule with good result, assuming the drug to be given in the right way and in sufficient quantities. Ketosis in cattle is a complicated entity. Each case has to be judged on its own merits and treated accordingly by a suitable combination of remedies. For instance, in persistent cases showing very low blood sugar values, *e.g.*, as low as 20 mg. per cent., a five days' treatment with ammonium lactate by mouth should be combined with one subcutaneous injection of 1 to 2 pints of 20 per cent. dextrose solution on the first day. However, this combined treatment is *not* necessary in the majority of cases.

As far as we can see at present, the chronic (alimentary) form of ketosis gives a more favourable response to the ammonium lactate therapy than the acute (hormonal) type. It produced particularly good results in those cases originating from the intake of large quantities of grass silage containing much butyric acid and a low content of lactic acid.

SUMMARY

Since 1942 ammonium lactate therapy in ketosis in the milk cow has been practised in numerous cases in the Netherlands and as a rule with good results. In cases of impairment of liver function a supply of lactate to the liver would raise the glycogen content and in this way improve its function. Moreover, the drug has a weakly laxative action, so it acts favourably in cases of ketosis showing constipation. Ammonium lactate is administered by mouth twice a day, each time in a quantity of about 120 grammes (4 oz.) of commercial ammonium lactate at a strength of about 80 to 85 per cent. The drug has to be diluted with about a pint of water prior to administration or it may be mixed with other materials and pressed to cakes. In persistent cases of ketosis the administration of ammonium lactate should be continued for more than five days. Checking the presence of acetone in the urine after six days (*e.g.*, the Legal or Rothera test) is advisable.

More particularly in cases of alimentary ketosis, *e.g.*, when grass silage containing much butyric acid and a low content of lactic acid was used as a fodder, ammonium lactate therapy gave favourable results.

REFERENCE

1 SEEKLES, L. (1948.) *Vet. J.* **104.** 238-251.

QUARANTINE AND VETERINARY REGULATIONS POLICY

Meeting at Hereford, the recently held World Conference of Hereford Breeders, attended by delegates from nine countries, recommended to the British Ministry of Agriculture that its Chief Veterinary Officer be asked to convene a meeting of representatives of all interested countries to formulate a common policy, where practicable, on quarantine and veterinary regulations.

Sir Thomas Dalling, Chief Veterinary Officer of the Ministry, invited to speak on the resolution, said (reports the *Farmer and Stock-breeder*) that while there were bound to be differences in attitude towards disease control, there must be a common route towards the settlement of international veterinary problems. This resolution could be the means of providing an approach to such a route.

The conference, which was also addressed by Mr. E. C. Lloyd, Deputy C.V.O., who spoke on disease problems, recommended that the nine countries at the conference form a permanent World Hereford Breeders' Council.

* * * * *

Gloucestershire F.U. are to ask for revision of the regulations relating to the grading of dangerous bulls which have been sent to the abattoir for slaughter. They agreed to press that upon ten days' notice being given of the sending of a dangerous bull to an abattoir, the bull should be weighed in the lorry and graded and paid for on a live weight basis.

ABSTRACT

[**Factors Affecting the Utilisation of Food by Dairy Cows. I. The Rate of Passage of Food through the Digestive Tract.** Balch, C. C. (1950.) *Brit. J. Nutrit.* **4.** 361–388. **II. Factors Influencing the Rate of Breakdown of Cellulose (Cotton Thread) in the Rumen of the Cow.** Balch, C. C., & Johnson, V. W. (1950.) *Ibid.* 389–394. **III. The Specific Gravity of Digesta from the Reticulo-Rumen of Cows.** Balch, C. C., & Kelly, A. (1950.) *Ibid.* 395–398.]

I. The experiments reported in this and the subsequent papers were conducted on Dairy Shorthorn cows at the National Institute for Research in Dairying. At a single meal the cows were given small amounts of hay or cotton-seed husk stained so that undigested particles could be identified visually in the faeces. The stains employed were magenta, rhodamine B, brilliant green, crystal violet and chrysoidene, and the foods were coloured by steeping them for six hours in hot solutions of the stains, washing in cold water and drying. It appeared from tests in which hay was suspended within the rumen in silk bags that the presence of the dyes might depress the rate of breakdown of the particles. Some experiments on fistulated animals were carried out also.

Excretion curves based upon the presence of hay in the faeces possessed a typical sigmoid shape, and indicated that hay was excreted at a slower rate than any of the other foods studied. The initial appearance of stained hay in the faeces varied between 12 and 24 hours after feeding, and excretion of the first 10 per cent. usually required a further ten to 15 hours. Excretion of the next 70 per cent. was more rapid, rates of 1·5 per cent. an hour being quite usual, so that 80 per cent. of the residues were typically excreted in 70 to 90 hours. Excretion continued thereafter at a slowly decreasing rate until seven to ten days after the marked meal. " Retention in the rumen area and rumination were shown to be the major factors in determining the spread of the excretion curves, and the time of the first appearance of the marker in the faeces was determined by the rate of its passage through the omasum, the abomasum and the intestines." Ground hay was excreted more rapidly than long hay, whether fed separately or in combination. When about 50 lb. mangolds was added to the daily diet, and the amount of hay not reduced, the rate of passage of hay through the reticulo-rumen was increased. The breakdown of crude fibre in the reticulo-rumen was more rapid when the ruminal contents had a more fluid consistency. Depression in the digestibility of crude fibre, known to occur when hay is ground or when highly digestible carbohydrates are added to the ration, was found not to be due to the result of changes in the rate of passage of the hay.

II. Coils formed of cotton thread were suspended in the rumen of fistulated Shorthorn cows and the rate of breakdown of cellulose was assessed by measuring reductions in the dry weight of the coils. It was found that the rate of breakdown was much faster in the ventral than in the dorsal sac of the rumen: this held true for diets variously comprising (*a*) unground hay, (*b*) ground hay, (*c*) unground hay with concentrates, (*d*) ground hay with concentrates. The rate of breakdown of the dry matter of hay suspended in silk bags was faster in the ventral than in the dorsal sac. It is suggested that increases in the dry matter content of the reticulo-rumen contents which normally accompany the feeding of ground hay are mainly responsible for the lower digestibility of the crude fibre of ground as opposed to unground hay. It appeared that in the reticulo-rumen a low dry matter content favoured the more rapid breakdown of cellulose.

III. Methods are described for determining the over-all specific gravity and the range of specific gravity in samples of digesta from the reticulo-rumen. The sp. gr. of small samples from which free water had been drained were determined by means of a sp. gr. bottle using kerosene (T.V.O.) of known sp. gr. as the liquid to be displaced. For the separation of particles of different sp. gr., four mixtures of kerosene and bromobenzene were prepared, having sp. gr. varying from 0·977 to 1·601. When cows were fed on hay only there was little difference between the digesta of the dorsal and ventral sac of the rumen, but those from the ventral sac were more homogeneous. It appeared likely that the position of the mass of fibrous material within the dorsal sac during the feeding of certain diets is maintained largely by the contractions of the reticulo-rumen. It is likely that this mass of digesta has a lower sp. gr. than its individual particles, possibly as a result of the entrapping of bubbles of gas produced during microbial fermentation. It is believed that the maintenance of the mass in the dorsal sac must be effected largely by the pressure of digesta against the cells of the sac, so that even when no contraction is taking place the mass does not readily drop back into the ventral sac. The majority of the digesta examined had a sp. gr. of between 1·022 and 1·055 with a mean value of approximately 1·038 to 1·039. It is recommended that in studies of digestion of the reticulo-rumen, indigestible particles resembling those of the digesta which may sometimes be required should therefore have a sp. gr. in this region.

A. N. W.

REVIEW

[**The Shepherd's Guide to the Prevention and Control of Diseases of Sheep.** Compiled by J. Russell Greig, C.B.E., PH.D. (EDIN.), M.R.C.V.S., F.R.S.E. (1951.) Published by the Department of Agriculture for Scotland, Edinburgh: H.M.S.O., 3s.]

Here is yet another veterinary book written definitely for the non-professional individual, namely, the shepherd and sheep farmer. The work is comprehensive and well up to date and the style is pleasant and could be regarded as " formal " rather than " popular." It is perhaps not easy to illustrate diseases of sheep in such a manner as to make them understandable to the layman, but from the point of view of the shepherd the omission of simple and lucid diagrams of certain aspects of sheep husbandry might be regretted. We accept the author's assertion in his preface that the text is concise and that controversial matters are avoided for the sake of clarity, but it is slightly inconsistent to find reference to Purkinje cells in a book dedicated mainly to the shepherd.

The publication has received the valuable assistance of many well-known workers and is certainly one which will be appreciated; it will, moreover, be found very serviceable by the veterinarian, for whom, however, it was expressly not intended to cater. Life histories are included where necessary and the book in general is one which should be possessed by every veterinarian interested in sheep diseases. It will provide him with a ready source of reference and give him a balanced view upon which to form a prognosis.

REPORT

[Department of Agriculture, Canada : Report of the Director of Science Service for the year ended May 31st, 1950.]

In Canada the official organisation for the development of the agricultural industry seems to be on different lines from that in vogue in most other countries.

Whereas the field services concerned with the development and control of the different branches of agriculture are organised under the control of a Direction of Production, the institutions and divisions concerned more specially with research are grouped together under a Director of Science.

It must be a debatable point as to which of the two usually recognised types of organisation for this very large field leads to the best results, and one can only observe that it requires a scientist of very wide training and great experience to be able to deal effectively with such diverse scientific subjects as Animal Pathology, Dairy Bacteriology, Plant Pathology, Chemistry, Entomology, and Plant Protection, all of which are included in the report under review.

The work of the Division of Animal Pathology, of which Dr. C. A. Mitchell is the head, may be classified under three main headings: research, services and the manufacture of biological products.

Much attention was given during the year to the diseases of poultry and considerable advances are said to have been made in knowledge and treatment of coccidiosis in chickens and blackhead in turkeys. Improved methods of diagnosis have been developed for Newcastle disease and a large stock of vaccine, which produces a three months' immunity and is incapable of setting up the disease, has been prepared for use if needed.

Two new strains of tubercle bacilli have been isolated, which are said to show unusual promise for the production of a more potent tuberculin free from the non-specific qualities of most tuberculins.

The properties of such insecticides as DDT and parathion have been investigated and a number of other substances are under study.

Approximately 145,000 blood tests for Brucellosis were made and some 4,452,064 doses of biological diagnostic products, mostly tuberculin, were distributed during the year.

Election of Ten Members of Council

The following were elected to represent the members of the Association on the Council for 1951-52: Messrs. John Holroyd, H. W. Steele-Bodger, Professor T. G. Browne, Mrs. D. I. Glover, Mr. G. N. Gould, Capt. J. W. Procter, Mrs. E. B. Wooldridge, Dr. W. R. Wooldridge, Capt. A. Whicher, Mr. E. P. Barrett.

V.V.B.F. Ladies' Guild

On the motion of Mr. H. W. Dawes, seconded by Professor R. E. Glover, it was unanimously resolved:—

"That this meeting records its very hearty thanks and appreciation to Mrs. Alex. Thomson, President, to Mrs. E. B. Wooldridge, Secretary, and Mrs. D. I. Glover, Treasurer, and to all the members of the Ladies' Guild, who had worked so splendidly for the Fund during the year 1950."

The meeting terminated with a cordial vote of thanks to the President for his conduct of the chair.

VICTORIA VETERINARY BENEVOLENT FUND

ANNUAL GENERAL MEETING IN LONDON

The thirty-third annual general meeting of the Victoria Veterinary Benevolent Fund was held at the Royal College of Veterinary Surgeons, 10, Red Lion Square, London, W.C.1, on Wednesday, June 6th, 1951.

There were present: Lt.-Col. P. J. Simpson (President) in the chair, Professors T. J. Bosworth, J. B. Buxton, Mr. H. W. Dawes, Major J. J. Dunlop, Mrs. D. I. Glover, Professor R. E. Glover, Messrs. G. N. Gould, Harry Holroyd, Dr. H. G. Lamont, Major T. M. Leach, Mr. N. H. Mathieson, Professor W. M. Mitchell, Capt. R. N. Phillips, Professor L. P. Pugh, Messrs. J. N. Ritchie, Arnold Spicer, Major Henry Sumner, Mr. R. J. G. Voisin, Mrs. E. B. Wooldridge, Professor G. H. Wooldridge and Dr. W. R. Wooldridge.

In attendance: Mr. R. V. Thatcher, Hon. Solicitor, and Mr. C. W. Francis, Secretary.

The notice convening the meeting, having been published in *The Veterinary Record*, was taken as read.

Minutes.—On the proposition of Professor G. H. Wooldridge, the minutes of the last annual general meeting, having been published, were taken as read and signed as correct.

Election of Officers

The following officers were unanimously re-elected for the year 1951-52:—

President.—Lt.-Col. P. J. Simpson.

Vice-Presidents.—Professor J. B. Buxton, Messrs. H. W. Dawes, G. P. Male and Professor G. H. Wooldridge.

Honorary Secretary.—Mr. Arnold Spicer.

Honorary Treasurer.—Professor J. B. Buxton.

Auditors.—Messrs. Wilkinson, Chater & Co. were reappointed Auditors of the Fund for the ensuing year.

Annual Report and Statement of Accounts

The Annual Report and Statement of Accounts for the year 1950 were submitted.

Dr. W. R. Wooldridge commented upon the amount of £394 14s. received in subscriptions from members during the year as compared with £300 contributed by the Ladies' Guild. He felt that with nearly 5,000 members on the Register the amount from subscriptions ought to have been considerably larger, and with a view to obtaining additional subscribers suggested that the Royal College of Veterinary Surgeons be asked to allow the inclusion of an appeal from the Fund when next the profession is circularised by the College, and that the Divisions of the National Veterinary Medical Association be also communicated with in regard to this matter.

The President promised that these suggestions would receive the careful consideration of the Council at its next meeting.

On the proposition of Professor G. H. Wooldridge, seconded by Mr. G. N. Gould, it was unanimously resolved:—

(*a*) "That this meeting places on record its special thanks to the Society of Practising Veterinary Surgeons, the various Divisions of the N.V.M.A., and other donors, for their handsome donations to the Fund during the year."

(*b*) "That the Annual Report and Statement of Accounts be received and adopted."

(*Continued at foot of preceding column.*)

IN PARLIAMENT

Importance of Home-grown Food

On Wednesday of last week, with the House of Commons in Committee of Supply, Sir Thomas Dugdale introduced a debate on agriculture in relation to the defence programme. He said that programme could not be considered only in terms of rearmament, because the people had to be fed, and the more could be produced at home the greater would be our security. In regard to meat production, was the Minister of Agriculture satisfied that he would be in a position to handle the cattle, sheep and lambs which would be coming fat off the grass this autumn? The Committee would agree that in view of the great efforts which were now being made by the farmers to increase meat production it would be disastrous if there were not adequate slaughtering facilities to utilise the beasts as they came on the market. Nothing could do more to shatter the confidence of farmers and discourage further effort. The feeding-stuffs position was precarious: if the production of milk and eggs fell the Government must be held responsible and not the farming community. In regard to research, it was only by having a close liaison from the agricultural colleges and universities right through to the farmer on his own holding that we could possibly expect the results of research to penetrate to farms, with increased and improved production.

Mr. Tom Williams, Minister of Agriculture, said that milk production was now fully adequate to meet all our needs. There was little doubt that farming efficiency was steadily improving with the help of the National Agricultural Advisory Service. Livestock was better managed, improved breeding was making headway, the control of diseases and pests both in animals and plants was more effective and more widely practised. These improvements were leading to large yields of livestock and crops and were enabling the farmers to maintain their incomes, while at the same time carrying very large increases in prices. In the last 12 months they had purchased over 500,000 tons of maize from the United States and they would purchase more if the dollars were available, if the maize were available, and if it was required for a further extension of the livestock programme.

Sheep Diseases

Mr. Donald Scott stressed the importance of stepping up sheep production. Sheep had become unpopular. It was true that in the past there was a tendency among sheep to develop all sorts of diseases, including some very highly contagious diseases. It was probably true to say in the old days that the worst enemy of a sheep was another sheep, and some of them might remember the old saying that a farmer might pay his rent with half a flock, but never with a flock and a half. To a certain extent the march of science, the wonderful research work done by the manufacturing chemists, the brilliant work of the agricultural departments of the universities and of men like Mr. Lyle Stewart, of Durham University, had tended to overcome a great many of these difficulties.

In the last 30 years such diseases as liver fluke, lamb dysentery, a great many internal parasites diseases, and others too numerous to mention, had become, if not altogether preventable, certainly under control. Did the Minister think that the wonderful research that had gone on in the past could be carried on in the future by the N.A.A.S., and what was even more important still, could the N.A.A.S. link up with the sheep farmer in order that he might become conscious of the great advance in sheep hygiene during these years, and which they hoped would continue to develop as time went on?

The time had arrived when they ought to have more demonstrations, more propaganda and more education on those subjects. He was one of those who regretted very deeply the taking away of the work of the agricultural departments in our universities and the giving of it to N.A.A.S. He looked forward to the day when a lot of that work would be returned to the universities.

Mr. Champion, Parliamentary Secretary to the Ministry of Agriculture, said he was amazed to hear the hon. Member's criticism of the National Agricultural Advisory Service. "Visitors to this country—and I think they are right—see in the N.A.A.S. something which arouses their envy, and which they would like to see copied in their own country."

The question of the killer dog (which had been raised in the debate) was one of great concern to the Minister. In consultation with the National Farmers' Union he would do all that was reasonable to cure the evil.

In regard to disease control, Mr. Champion said: "My experience was a hill farming experience between the years 1922 and 1927, when it was really a hard grind with no margins at all, and when suddenly the sort of thing that could happen in those days came upon one—the catastrophe of a cow slipping her calf and the realisation that contagious abortion was upon us.

"Perhaps the most pleasing thing that I have known during recent years is the fact that strain 19 vaccine is providing the cure or rather the prevention of contagious abortion, and I think it right to pay tribute to those research workers and scientists who have produced this tremendous boon to the agricultural industry. The fear of contagious abortion has been removed. We should be praising and assisting the calf vaccination scheme which enables the farmer to have heifer calves vaccinated at a very low cost. I am pleased to see that, according to the latest figures, there were some 340,000 calves vaccinated under this scheme in 1950."

. . . . . .

Questions

Foot-and-Mouth Disease, Scotland

Mr. Spence (July 19th) asked the Minister of Agriculture whether he will make a statement regarding the recent outbreak of foot-and-mouth disease in Scotland, with particular reference to recent deliveries of imported meat in the affected areas.

Mr. T. Williams: My veterinary advisers have not so far ascertained the cause of the recent outbreaks of foot-and-mouth disease in Scotland. Imported meat from South America was distributed in the Stirling area during June, but there is no direct evidence connecting the outbreaks with imported meat.

. . . . . .

Slaughterhouses

Mr. Heathcoat Amory (July 16th) asked the Minister of Food why it was decided not to locate one of the nine new slaughterhouses, to be provided by the Government, in the County of Devon, in view of its importance as a stock-raising area.

Mr. Webb: There is an urgent need for additional slaughterhouses over most of the country and the nine new slaughterhouses are being built where they will make the greatest immediate contribution. I can assure the hon. Member that the claims of Devon were fully considered, but on balance of our urgent short-term needs other places had to come first.

Mr. Amory: Is the right hon. Gentleman aware that while we have many amenities and assets in Devon we have not too many slaughterhouses? We feel that we have a very strong claim to one of the nine, but if the Minister cannot give us one of them, will he add a tenth and give us that one?

Mr. Webb: Devon must take its place in the queue.

. . . . . .

Agriculture: Departmental Staff

Mr. Hurd (July 16th) asked the Minister of Agriculture the numbers of staff now employed by the National Agricultural Advisory Service, the county agricultural executive committees and the total staff, administrative and technical, employed by his Department.

Mr. Champion: The staff now employed by the National Agricultural Advisory Service numbers 1,674, and by the county agricultural committees 6,986. The total staff in the Ministry numbers 15,037, of whom 5,200 are professional scientific and technical workers and 9,837 belong to other classes.

. . . . . .

Wild Animals (Cruelty)

Mr. Stewart (July 17th) asked the Secretary of State for Scotland if, in view of the Report of the Committee on Cruelty to Wild Animals, particularly Sections 203 to 207 referring to the poaching of red deer and the suffering caused through the use of tommy-guns and other unauthorised weapons, he will now report on the action which he undertook to institute in response to the representations of the hon. Member for Fife, East, with the object of preventing a repetition of these cruelties in the future.

Miss Herbison: My right hon. Friend is consulting the various interests concerned in regard to the Committee's recommendations on the subject of deer poaching.

* * * * *

Colonial Development Corporation: Cleared Land, Gambia

Mr. Hurd (July 18th) asked the Secretary of State for the Colonies if a decision has been reached about the future use of the land in the Gambia cleared by the Colonial Development Corporation for the purposes of the poultry project now abandoned.

Mr. J. Griffiths: Yes, Sir. As my right hon. Friend informed

REPORT

[Department of Agriculture, Canada : Report of the Director of Science Service for the year ended May 31st, 1950.]

In Canada the official organisation for the development of the agricultural industry seems to be on different lines from that in vogue in most other countries.

Whereas the field services concerned with the development and control of the different branches of agriculture are organised under the control of a Direction of Production, the institutions and divisions concerned more specially with research are grouped together under a Director of Science.

It must be a debatable point as to which of the two usually recognised types of organisation for this very large field leads to the best results, and one can only observe that it requires a scientist of very wide training and great experience to be able to deal effectively with such diverse scientific subjects as Animal Pathology, Dairy Bacteriology, Plant Pathology, Chemistry, Entomology, and Plant Protection, all of which are included in the report under review.

The work of the Division of Animal Pathology, of which Dr. C. A. Mitchell is the head, may be classified under three main headings: research, services and the manufacture of biological products.

Much attention was given during the year to the diseases of poultry and considerable advances are said to have been made in knowledge and treatment of coccidiosis in chickens and blackhead in turkeys. Improved methods of diagnosis have been developed for Newcastle disease and a large stock of vaccine, which produces a three months' immunity and is incapable of setting up the disease, has been prepared for use if needed.

Two new strains of tubercle bacilli have been isolated, which are said to show unusual promise for the production of a more potent tuberculin free from the non-specific qualities of most tuberculins.

The properties of such insecticides as DDT and parathion have been investigated and a number of other substances are under study.

Approximately 145,000 blood tests for Brucellosis were made and some 4,452,064 doses of biological diagnostic products, mostly tuberculin, were distributed during the year.

Election of Ten Members of Council

The following were elected to represent the members of the Association on the Council for 1951-52: Messrs. John Holroyd, H. W. Steele-Bodger, Professor T. G. Browne, Mrs. D. I. Glover, Mr. G. N. Gould, Capt. J. W. Procter, Mrs. E. B. Wooldridge, Dr. W. R. Wooldridge, Capt. A. Whicher, Mr. E. P. Barrett.

V.V.B.F. Ladies' Guild

On the motion of Mr. H. W. Dawes, seconded by Professor R. E. Glover, it was unanimously resolved:—

"That this meeting records its very hearty thanks and appreciation to Mrs. Alex. Thomson, President, to Mrs. E. B. Wooldridge, Secretary, and Mrs. D. I. Glover, Treasurer, and to all the members of the Ladies' Guild, who had worked so splendidly for the Fund during the year 1950."

The meeting terminated with a cordial vote of thanks to the President for his conduct of the chair.

VICTORIA VETERINARY BENEVOLENT FUND

ANNUAL GENERAL MEETING IN LONDON

The thirty-third annual general meeting of the Victoria Veterinary Benevolent Fund was held at the Royal College of Veterinary Surgeons, 10, Red Lion Square, London, W.C.1, on Wednesday, June 6th, 1951.

There were present: Lt.-Col. P. J. Simpson (President) in the chair, Professors T. J. Bosworth, J. B. Buxton, Mr. H. W. Dawes, Major J. J. Dunlop, Mrs. D. I. Glover, Professor R. E. Glover, Messrs. G. N. Gould, Harry Holroyd, Dr. H. G. Lamont, Major T. M. Leach, Mr. N. H. Mathieson, Professor W. M. Mitchell, Capt. R. N. Phillips, Professor L. P. Pugh, Messrs. J. N. Ritchie, Arnold Spicer, Major Henry Sumner, Mr. R. J. G. Voisin, Mrs. E. B. Wooldridge, Professor G. H. Wooldridge and Dr. W. R. Wooldridge.

In attendance: Mr. R. V. Thatcher, Hon. Solicitor, and Mr. C. W. Francis, Secretary.

The notice convening the meeting, having been published in *The Veterinary Record,* was taken as read.

Minutes.—On the proposition of Professor G. H. Wooldridge, the minutes of the last annual general meeting, having been published, were taken as read and signed as correct.

Election of Officers

The following officers were unanimously re-elected for the year 1951-52:—

President.—Lt.-Col. P. J. Simpson.

Vice-Presidents.—Professor J. B. Buxton, Messrs. H. W. Dawes, G. P. Male and Professor G. H. Wooldridge.

Honorary Secretary.—Mr. Arnold Spicer.

Honorary Treasurer.—Professor J. B. Buxton.

Auditors.—Messrs. Wilkinson, Chater & Co. were reappointed Auditors of the Fund for the ensuing year.

Annual Report and Statement of Accounts

The Annual Report and Statement of Accounts for the year 1950 were submitted.

Dr. W. R. Wooldridge commented upon the amount of £394 14s. received in subscriptions from members during the year as compared with £300 contributed by the Ladies' Guild. He felt that with nearly 5,000 members on the Register the amount from subscriptions ought to have been considerably larger, and with a view to obtaining additional subscribers suggested that the Royal College of Veterinary Surgeons be asked to allow the inclusion of an appeal from the Fund when next the profession is circularised by the College, and that the Divisions of the National Veterinary Medical Association be also communicated with in regard to this matter.

The President promised that these suggestions would receive the careful consideration of the Council at its next meeting.

On the proposition of Professor G. H. Wooldridge, seconded by Mr. G. N. Gould, it was unanimously resolved:—

(*a*) "That this meeting places on record its special thanks to the Society of Practising Veterinary Surgeons, the various Divisions of the N.V.M.A., and other donors, for their handsome donations to the Fund during the year."

(*b*) "That the Annual Report and Statement of Accounts be received and adopted."

(*Continued at foot of preceding column.*)

IN PARLIAMENT

Importance of Home-grown Food

On Wednesday of last week, with the House of Commons in Committee of Supply, Sir Thomas Dugdale introduced a debate on agriculture in relation to the defence programme. He said that programme could not be considered only in terms of rearmament, because the people had to be fed, and the more could be produced at home the greater would be our security. In regard to meat production, was the Minister of Agriculture satisfied that he would be in a position to handle the cattle, sheep and lambs which would be coming fat off the grass this autumn? The Committee would agree that in view of the great efforts which were now being made by the farmers to increase meat production it would be disastrous if there were not adequate slaughtering facilities to utilise the beasts as they came on the market. Nothing could do more to shatter the confidence of farmers and discourage further effort. The feeding-stuffs position was precarious: if the production of milk and eggs fell the Government must be held responsible and not the farming community. In regard to research, it was only by having a close liaison from the agricultural colleges and universities right through to the farmer on his own holding that we could possibly expect the results of research to penetrate to farms, with increased and improved production.

Mr. Tom Williams, Minister of Agriculture, said that milk production was now fully adequate to meet all our needs. There was little doubt that farming efficiency was steadily improving with the help of the National Agricultural Advisory Service. Livestock was better managed, improved breeding was making headway, the control of diseases and pests both in animals and plants was more effective and more widely practised. These improvements were leading to large yields of livestock and crops and were enabling the farmers to maintain their incomes, while at the same time carrying very large increases in prices. In the last 12 months they had purchased over 500,000 tons of maize from the United States and they would purchase more if the dollars were available, if the maize were available, and if it was required for a further extension of the livestock programme.

Sheep Diseases

Mr. Donald Scott stressed the importance of stepping up sheep production. Sheep had become unpopular. It was true that in the past there was a tendency among sheep to develop all sorts of diseases, including some very highly contagious diseases. It was probably true to say in the old days that the worst enemy of a sheep was another sheep, and some of them might remember the old saying that a farmer might pay his rent with half a flock, but never with a flock and a half. To a certain extent the march of science, the wonderful research work done by the manufacturing chemists, the brilliant work of the agricultural departments of the universities and of men like Mr. Lyle Stewart, of Durham University, had tended to overcome a great many of these difficulties.

In the last 30 years such diseases as liver fluke, lamb dysentery, a great many internal parasites diseases, and others too numerous to mention, had become, if not altogether preventable, certainly under control. Did the Minister think that the wonderful research that had gone on in the past could be carried on in the future by the N.A.A.S., and what was even more important still, could the N.A.A.S. link up with the sheep farmer in order that he might become conscious of the great advance in sheep hygiene during these years, and which they hoped would continue to develop as time went on?

The time had arrived when they ought to have more demonstrations, more propaganda and more education on those subjects. He was one of those who regretted very deeply the taking away of the work of the agricultural departments in our universities and the giving of it to N.A.A.S. He looked forward to the day when a lot of that work would be returned to the universities.

Mr. Champion, Parliamentary Secretary to the Ministry of Agriculture, said he was amazed to hear the hon. Member's criticism of the National Agricultural Advisory Service. "Visitors to this country—and I think they are right—see in the N.A.A.S. something which arouses their envy, and which they would like to see copied in their own country."

The question of the killer dog (which had been raised in the debate) was one of great concern to the Minister. In consultation with the National Farmers' Union he would do all that was reasonable to cure the evil.

In regard to disease control, Mr. Champion said: "My experience was a hill farming experience between the years 1922 and 1927, when it was really a hard grind with no margins at all, and when suddenly the sort of thing that could happen in those days came upon one—the catastrophe of a cow slipping her calf and the realisation that contagious abortion was upon us.

"Perhaps the most pleasing thing that I have known during recent years is the fact that strain 19 vaccine is providing the cure or rather the prevention of contagious abortion, and I think it right to pay tribute to those research workers and scientists who have produced this tremendous boon to the agricultural industry. The fear of contagious abortion has been removed. We should be praising and assisting the calf vaccination scheme which enables the farmer to have heifer calves vaccinated at a very low cost. I am pleased to see that, according to the latest figures, there were some 340,000 calves vaccinated under this scheme in 1950."

. . . . . .

Questions

Foot-and-Mouth Disease, Scotland

Mr. Spence (July 19th) asked the Minister of Agriculture whether he will make a statement regarding the recent outbreak of foot-and-mouth disease in Scotland, with particular reference to recent deliveries of imported meat in the affected areas.

Mr. T. Williams: My veterinary advisers have not so far ascertained the cause of the recent outbreaks of foot-and-mouth disease in Scotland. Imported meat from South America was distributed in the Stirling area during June, but there is no direct evidence connecting the outbreaks with imported meat.

. . . . . .

Slaughterhouses

Mr. Heathcoat Amory (July 16th) asked the Minister of Food why it was decided not to locate one of the nine new slaughterhouses, to be provided by the Government, in the County of Devon, in view of its importance as a stock-raising area.

Mr. Webb: There is an urgent need for additional slaughterhouses over most of the country and the nine new slaughterhouses are being built where they will make the greatest immediate contribution. I can assure the hon. Member that the claims of Devon were fully considered, but on balance of our urgent short-term needs other places had to come first.

Mr. Amory: Is the right hon. Gentleman aware that while we have many amenities and assets in Devon we have not too many slaughterhouses? We feel that we have a very strong claim to one of the nine, but if the Minister cannot give us one of them, will he add a tenth and give us that one?

Mr. Webb: Devon must take its place in the queue.

. . . . . .

Agriculture: Departmental Staff

Mr. Hurd (July 16th) asked the Minister of Agriculture the numbers of staff now employed by the National Agricultural Advisory Service, the county agricultural executive committees and the total staff, administrative and technical, employed by his Department.

Mr. Champion: The staff now employed by the National Agricultural Advisory Service numbers 1,674, and by the county agricultural committees 6,986. The total staff in the Ministry numbers 15,037, of whom 5,200 are professional scientific and technical workers and 9,837 belong to other classes.

. . . . . .

Wild Animals (Cruelty)

Mr. Stewart (July 17th) asked the Secretary of State for Scotland if, in view of the Report of the Committee on Cruelty to Wild Animals, particularly Sections 203 to 207 referring to the poaching of red deer and the suffering caused through the use of tommy-guns and other unauthorised weapons, he will now report on the action which he undertook to institute in response to the representations of the hon. Member for Fife, East, with the object of preventing a repetition of these cruelties in the future.

Miss Herbison: My right hon. Friend is consulting the various interests concerned in regard to the Committee's recommendations on the subject of deer poaching.

* * * * *

Colonial Development Corporation: Cleared Land, Gambia

Mr. Hurd (July 18th) asked the Secretary of State for the Colonies if a decision has been reached about the future use of the land in the Gambia cleared by the Colonial Development Corporation for the purposes of the poultry project now abandoned.

Mr. J. Griffiths: Yes, Sir. As my right hon. Friend informed

the House on May 9th, the Colonial Development Corporation set up a working party to consider the possible future use of the land. The working party recommended the establishment of a farm of about 400 acres on part of the land, to test, over a five-year period, the possibility of growing a variety of crops, including cotton and flue-cured tobacco. The farm would be administered by the Director of Agriculture of the Government of the Gambia in consultation with the Corporation, and the cost of operating the farm, which would be limited to an average of £10,000 per annum, would be shared between the Corporation and the Gambia Government. In addition, the Corporation would second a farm manager and contribute a further £1,250 per annum towards his salary and expenses. These recommendations have been accepted by the Corporation and the Government of the Gambia, and detailed arrangements are now under discussion. The future use of the rest of the land will depend on the outcome of these experiments.

Mr. Hurd: While I think we will all accept this as a reasonable sounding arrangement between the Government of the Gambia and the Colonial Development Corporation, could the Minister tell us what he proposes to do with the balance of 9,000 odd acres which were cleared by the Corporation? He spoke of the 400 acres; could he tell us about the 9,000?

Mr. Griffiths: I said that the future use of the rest of the land will depend upon consideration given in the light of experiments on this farm.

Mr. Walter Fletcher: Does the right hon. Gentleman agree that this is a typical example of a major error followed by a minor triumph?

Mrs. Braddock: In view of the very tragic financial difficulties that these schemes got into, due to the fact that the Government took without question the advice of private enterprise experts, will my right hon. Friend make certain that any recommendations that are made are vetted by those people in the area who know something about what the land can do?

Mr. Griffiths: This decision was taken by the Corporation on the advice of those whose services they enlisted.

NOTES AND NEWS

Diary of Events

July 31st.—Annual General Meeting of the National Veterinary Benevolent and Mutual Defence Society at Manchester (Midland Hotel), 2.30 p.m.

Aug. 9th.—Annual General Meeting of the Lincolnshire and District Division, N.V.M.A., at Lincoln (Saracen's Head Hotel), 2.15 p.m.

Sept. 23rd-29th.—Sixty-ninth Annual General Meeting and Congress of the National Veterinary Medical Association, at Eastbourne.

* * * * *

PERSONAL

Appointment.—The appointment in the Colonial Veterinary Service is announced of Lieut.-Colonel J. D. Daly, M.R.C.V.S. (R.A.V.C., retired), as Veterinary Officer, Federation of Malaya.

. . . . . .

Births.—Carmichael.—On July 21st, 1951, at Achendaul, Spean Bridge, Inverness-shire, to Nancy, wife of M. A. Carmichael, B.Sc., M.R.C.V.S., a second son.

Crawshaw.—On July 22nd, 1951, at the Jarvis Maternity Home, Guildford, to Eileen (*née* Smith, S.R.N.), wife of H. A. Crawshaw, F.R.C.V.S., a son—Graham John.

Lofthouse.—On July 20th, to Patricia (*née* Lupton), wife of Frank Lofthouse, M.R.C.V.S., a son—Frederick Mark.

Ray.—On June 23rd, 1951, at Salisbury, Wilts, to Monique, wife of Brian Ray, M.R.C.V.S., a son—Stéphane Donald.

Wynne.—On July 18th, 1951, to Glenys, wife of M. Wynne, M.R.C.V.S., of Tanyfron, Llandyssul, Cards., a daughter—Helen.

. . . . . .

Forthcoming Marriage.—Betts—Battersby.—The engagement is announced between Alan O. Betts, son of Mr. and Mrs. A. O. Betts, Wroxham House, Norfolk, and Joan M. Battersby, second daughter of Mr. and Mrs. P. Battersby, of Manchester.

. . .

Marriage.—Theobald—Briggs.—On July 7th, 1951, at Ilkley Parish Church, Leslie Theobald, B.V.Sc., M.R.C.V.S., younger son of Mr. and Mrs. Charles Theobald, of Liverpool, to Ninetta Mary Briggs, B.V.Sc., M.R.C.V.S., elder daughter of Mr. and Mrs. G. A. Briggs, of Easby Drive, Ilkley

R.C.V.S. OBITUARY

Billinghurst, H. W., 84, Carbery Avenue, Bournemouth, Hants. Graduated London, December 13th, 1893. Died July 10th, 1951; aged 78 years.

. . . .

Richard Mettam

An Appreciation

The death of Richard Mettam on July 11th, at Lanark in Scotland, as reported in your last issue, will come as a sad shock to all his colleagues and friends in both East and West Africa.

I knew him for a good few years when we were working together in Nigeria and came to have an enormous respect for him as a man and for his capabilities as a pathologist. His knowledge of his subject was encyclopaedic, for he read widely and had a most retentive memory, while his vast store of knowledge was always at the ready disposal of everyone who cared to ask him for help and advice. He was a most likeable personality and on looking back over the long period of our association I cannot remember an occasion when he spoke ill of anyone.

Research officers in the Colonial Service are made, not born, and form in themselves almost a specialist class of scientific workers, acquiring their knowledge of tropical diseases only through long residence and work in the tropics and close association with the peculiar problems of those regions. Richard Mettam's passing has created a vacancy in the senior ranks of the Colonial Research Service which will be hard to fill.

Other and abler pens than mine will give a fuller and better account of his life and work, but this I know—his death will be deeply felt by all who had the happy pleasure of working with him in Nigeria.

Along the walls of one room of the laboratory buildings at Vom Richard Mettam formed a collection of photographs of men who had during their lifetime made a worthwhile contribution to veterinary science in Africa. Now his own photograph will hang there, honourably filling his niche and contributing to the veneration and high esteem in which all those in that gallery are held.

To his wife, daughter and son will go the heartfelt sympathy of all of us who knew both him and them.

W. W. H.

* * * * *

The Aldershot Show, 1951

For the first time since before the war the Aldershot Show was held at its old venue at Rushmoor Arena on July 12th, 13th and 14th. Entries for the horse show alone exceeded 600! Other attractive features included beagles, foxhounds and dog shows, farriery competitions, military displays and commercial exhibitions.

"Cavalcade of Cavalry"

The cavalcade of cavalry was a colourful daily display in which every cavalry regiment and mounted supporting unit of the British Army was represented. Each of the 31 riders wore the full dress uniform of his regiment or corps and the tunics of scarlet and blue, plumed helmets, busbies, embroidered saddle cloths and ceremonial horse furniture made a vivid splash of colour. They rode into the arena to the strains of "The Keel Row" played by the band of the 14/20th King's Hussars or 7th Queen's Own Hussars. Having formed up in line in front of the Royal Box, each representative came forward in turn while a brief outline of the history of the regiment was broadcast. The rider then walk marched with drawn sword around the arena. The R.A.V.C. was well represented by Captain W. Richey, M.B.E., Chief Equitation Instructor, V. & R. Training Centre and Depot, R.A.V.C. The outline of the Corps history given by the commentator was as follows:—

> "This humane service came into existence in 1796. The first Army Veterinary Surgeon was appointed to the 11th Light Dragoons in that year. Officers and N.C.O.s of the R.A.V.C. have served with all units of the Mounted Arm throughout their years of glorious history."

The Farriery Competition and R.A.V.C. Exhibition

The farriery competition and exhibition proved an unqualified success. There is little doubt that this feature will now become an annual event at this premier military show in the country. The number of visitors attracted by the smoke and homely clink of the hammer on anvil was surprisingly large.

In addition to the competition there was a large marquee showing some of the activities of the R.A.V.C. This proved exceedingly popular with horse and dog lovers; Mr. J. D. G. Crisp, M.B.E., the Steward in charge of the exhibition, was kept very busy each day showing visitors around. The whole competition and exhibition site had been attractively decorated with flowering plants, crests, flags and whitewashed ropes, compelling many curious people to visit the show. The Princess Royal drove past the site on two occasions.

Farriery Competition Results.—On the first day Class I—open to Warrant Officers and N.C.O.s—attracted entrants from the Life Guards, the Royal Horse Guards, R.A.V.C., R.A.S.C. and R.H.A.

Farrier Staff-Sergeant Moore, R.A.V.C., of the School of Farriery, Melton Mowbray, won this event, with Farrier Sergeant W. Hobbs, R.A.V.C., just arrived in the United Kingdom from Moascar, Egypt, second. Farrier Staff-Sergeant Peake, R.A.S.C., of the Animal Transport Company, 1st Training Battalion, R.A.S.C., was third.

Class II Novices—open to Army farriers—attracted a very large entry, and this caused some anxiety amongst the judges and stewards as to whether the class could be finished in the day. However, this was satisfactorily accomplished and the results were as follow: 1st—Farr. Taylor, R.A.V.C.; 2nd—Farr. Graham, R.A.V.C., and 3rd.—Gnr. Coffey, R.H.A.

Class III, open to the world, attracted a good entry of 16 competitors, of whom over half were well-known civilian shoeing-smiths from as far afield as Oxford.

This class did not finish until after 6 p.m. and the results showed a photo finish. The winner was Farrier Sergeant W. Hobbs, R.A.V.C., with 37¾ points. Mr. J. Clayton, of Windsor, was second with 37¼ points and Mr. T. G. Moss, of Petersfield, third with 36½ points. The silver medal and certificate of the Worshipful Company of Farriers was awarded to the winner. The bronze medal and certificate was awarded to the runner-up, Mr. Claydon, as the condition laid down by the Worshipful Company for this award, *viz.*, more than eight competitors, was fulfilled.

The Commander Aldershot Garrison distributed the prizes.

Social

Brigadier A. G. Heveningham, O.B.E., gave a small dinner party for officers and their wives at the Officers' Club, Aldershot, on Friday, July 13th, 1951. This followed a cocktail party given by Major and Mrs. J. H. Wilkins at their home.

J. H. W.

* * * * *

Tuberculosis (Attested Herds) Scheme, 1950

Statement Showing Position of Attested Herds in each County as at June 30th, 1951

County	Total Cattle as at 3.6.50	Number of Attested Herds as at 30.6.51	Number of Cattle in Attested Herds as at 30.6.51	Percentage of Attested Cattle to Total Cattle
Bedford	49,489	162	9,500	19·2
Berkshire	88,659	672	40,000	45·0
Buckingham	119,332	542	30,440	25·5
Cambridge	34,692	135	8,290	23·9
Isle of Ely	23,705	36	1,910	8·1
Chester	254,738	1,046	51,130	20·0
Cornwall	289,851	843	30,130	10·4
Isles of Scilly	481	89	•1,290	100·0
Cumberland	228,610	2,366	112,210	49·1
Derby	194,059	535	27,790	14·3
Devon	432,429	1,245	54,200	12·6
Dorset	156,148	993	60,250	38·6
Durham	119,242	832	30,550	25·6
Essex	130,089	713	39,520	30·4
Gloucester	203,974	926	53,160	26·1
Hampshire	154,061	1,150	61,780	40·0
Isle of Wight	21,346	198	8,600	40·0
Hereford	146,823	500	24,190	16·5
Hertford	63,378	379	22,800	36·0
Huntingdon	30,686	48	3,070	10·0
Kent	126,063	633	32,990	26·2
Lancaster	286,044	1,521	62,750	21·8
Leicester	176,494	336	19,250	10·9
Lincoln (Holland)	29,759	11	330	1·1
Lincoln (Kesteven)	73,026	119	6,020	8·2
Lincoln (Lindsey)	170,480	193	9,489	5·6
London	—	—	—	—
Middlesex	8,216	43	2,400	29·3
Norfolk	198,792	572	42,790	21·6
Northampton	160,712			
Soke of Peterborough	7,295	219	14,930	8·9
Northumberland	203,001	461	27,190	13·4
Nottingham	115,405	240	11,690	11·1
Oxford	112,623	718	40,640	36·1
Rutland	20,991	15	560	2·7
Salop	288,516	832	50,230	17·4
Somerset	337,676	1,595	86,660	25·7
Stafford	245,760	540	27,420	11·1
Suffolk, East	86,578	325	17,270	20·0
Suffolk, West	42,569	217	14,120	33·1
Surrey	54,583	530	23,760	43·5
Sussex, East	111,901	639	28,370	25·3
Sussex, West	78,202	518	27,890	35·6
Warwick	158,264	467	25,920	16·4
Westmorland	98,326	1,712	72,750	74·0
Wiltshire	205,118	800	61,040	29·8
Worcester	107,782	305	15,920	14·8
York, E. Riding	144,568	146	6,590	4·6
York, N. Riding	258,275	1,277	46,150	17·9
York, W. Riding	352,538	1,901	69,420	19·7
England	7,003,149	30,295	1,515,340	21·5
Anglesey	57,303	423	10,850	18·9
Brecon	50,765	285	10,550	20·8
Caernarvon	63,252	880	19,760	31·2
Cardigan	78,939	4,021	68,030	86·2
Carmarthen	142,099	5,430	115,060	81·0
Denbigh	106,274	927	27,390	25·7
Flint	64,616	283	11,390	17·6
Glamorgan	80,242	456	12,580	15·7
Merioneth	42,870	1,297	26,610	62·0
Monmouth	75,973	306	12,710	16·7
Montgomery	102,886	986	31,660	30·8
Pembroke	105,391	2,205	53,520	50·8
Radnor	40,608	113	3,920	9·7
Wales	1,011,218	17,612	404,030	39·9
England & Wales	8,014,367	47,907	1,919,370	23·9
Aberdeen	235,580	296	25,590	10·9
Angus	69,700	156	15,060	21·6
Argyll	63,503	876	28,360	44·7
Ayr	153,805	2,358	139,970	91·0
Banff	57,370	73	5,090	8·9
Berwick	35,169	98	6,450	18·3
Bute:				
Non-Attested Area	5,200	86	4,490	86·3
Attested Area	5,535	237	5,535	100·0
Caithness	27,446	165	4,510	16·4
Clackmannan	4,733	34	2,380	50·2
Dumfries	105,272	1,603	86,850	82·5
Dunbarton	17,256	266	14,000	81·1
East Lothian	16,254	61	4,520	27·8
Fife	65,635	435	27,890	42·5
Inverness	52,447	111	5,950	11·3
Kincardine	40,925	80	6,400	15·6
Kinross	9,815	51	4,110	41·8
Kirkcudbright	75,899	968	61,950	81·6
Lanark	94,268	1,476	78,900	83·7
Midlothian	24,736	248	12,720	51·4
Moray	30,516	68	5,110	16·7
Nairn	8,804	25	1,900	21·6
Orkney	48,594	249	6,860	14·1
Peebles	11,632	201	8,010	68·8
Perth	95,638	349	21,680	22·7
Renfrew	39,217	497	24,820	82·1
Ross-shire	40,213	206	4,430	11·0
Roxburgh	35,541	96	6,100	17·2
Selkirk	6,060	84	2,340	38·6
Stirling	41,621	472	24,400	58·6
Sutherland	10,184	164	1,480	14·5
West Lothian	15,317	184	8,940	58·3
Wigtown	74,297	730	58,890	79·2
•Zetland	7,208	1,870	•7,210	100·0
Scotland	1,616,390	14,773	722,890	44·7
Great Britain	9,630,757	62,680	2,642,260	27·4

• All cattle herds in Zetland and the Isles of Scilly are attested. This figure represents the number of animals at the last test of the herds.

* * * * *

OLYMPIC HORSE TRIALS, 1951

For the third year in succession this event took place over the Duke of Beaufort's land at Badminton; this time it was international, and Switzerland, Holland and Eire competed.

Commenting on the Trials in the July issue of *The Horse and Pony News*, Lieut.-Colonel T. L. Horn, M.C., observes: "Our foreign friends sent over some of their best riders and horses, all of which had had much experience in these three-day events. As was to be expected they took away most of the prizes, but the knowledge gained and lessons learnt will be of inestimable value to our Olympic Committee for Helsinki next year. The Swiss were full of admiration for our horses, but though guarded in their comments and, as always, polite to their hosts, they were quite definitely of the opinion that for a competition of this kind, which is undoubtedly the most exacting of any equestrian event in the world, we start at the wrong end. They said that in England we take our four-year-old out hunting and teach him to jump, which he probably does well, but, even so, and even with an experienced rider, he can always refuse when he wants to, if faced with an awkward or unknown obstacle; we then train him in some form of dressage, *i.e.*, manners, obedience and improvement of balance. They train their horses first of all to learn obedience, and while this is being done, their training automatically improves manners and balance. They then teach them to jump by easy stages and, having first learnt obedience, they will be prepared to jump anything that is presented to them. This was amply proved by their performance across country. Some may have fallen, certainly one did twice, but it was from exhaustion, not from lack of courage or obedience. . . . To sum up, anyone who wasn't blind or completely ignorant must have been greatly impressed by the quiet and effortless way in which the Swiss rode—no pulling and hauling, no excessive use of the leg and consequently no undue upsetting or tiring of the horse. In spite of new methods and new ideas there never has

been, or is, any 'get rich quick' method in the training of either horse or rider, and the sooner some of the new school of so-called experts realise this the better will our chances be. Mental and physical qualities of both horse and rider must be developed and often those of the rider seem to take longer than those of the horse! Ask any doctor or physical trainer who knows his job, ask any veterinary surgeon who is a horseman himself, and they will tell you the same thing: that mental and physical development takes time."

. . . . . .

The following riders have been invited to train for the British team which will compete in the Three Days Event, and will join the training camp at Porlock next January: Major P. Borwick, M.C., Kelmarsh, Northampton; Mr. J. R. Hindley, Gisburne, Clitheroe, Lancs; Major John Miller, D.S.O., M.C., Welsh Guards; Major L. Rook, Royal Horse Guards; Captain M. Naylor-Leyland, Household Cavalry; Lieutenant John Oram, Royal Navy, and Lieutenant A. J. McCance, Royal Scots Greys.

* * * * *

LEGAL NOTES

Marketing of Warble-infested Heifers.—At Long Ashton, on July 13th, two farmers, Thomas Charles Hignell, of Norton Farm, Henbury, Bristol, and William John Tripp, of Apple Farm, West Wick, Worle, Weston-super-Mare, were prosecuted for having entered heifers visibly infested with warble-fly maggot at Winford Market in May without giving them approved treatment.

Hignell, who had one beast infested, was fined £3 with 2 gns. costs, and Tripp, owner of three infested heifers, was fined a total of £6 with 2 gns. costs.

Both pleaded not guilty, Tripp producing a container of anti-warble-fly mixture which, he said, he had used on the beasts three weeks previously.

Mr. Peter McGregor, a veterinary inspector of the Ministry of Agriculture and Fisheries, stated that the mixture was not an approved treatment for beasts infested with the maggot.

Hignell pleaded that he had no idea his heifer was infested until he saw it in the ring, when it was too late to do anything.

* * * * *

THE BRITISH ASSOCIATION MEETING IN EDINBURGH

This year the British Association for the Advancement of Science will hold its annual meeting in Edinburgh from August 8th to 15th. It will be gratifying to his colleagues in the profession that the list of contributors to the monumental programme of papers to be discussed includes Sir Thomas Dalling, Chief Veterinary Officer of the Ministry of Agriculture and Immediate Past-President of the Royal College of Veterinary Surgeons. Sir Thomas will address the agriculture section on the morning of Tuesday, August 14th, on the relationship of animal health to production. The President of the section is Dr. E. M. Crowther, whose address on experimental agriculture will be delivered on Thursday morning, August 9th.

In the same section, on August 14th, genetical limits to intensive stock-production will be reviewed by Professor R. A. Fisher, Cambridge University, while his colleague, Dr. Hammond, will deal with the physiological as distinct from the genetical limits. Dr. A. S. Parkes, of the National Institute of Medical Research, will deal with the preservation of spermatozoa at low temperature, an important phase of A.I. development.

* * * * *

ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

FOOT-AND-MOUTH DISEASE:

Stirling.—Steuarthall Farm, Stirling (July 17th); Shotts Field, Lower Polmaise, Stirling (July 19th); Bolfornought Farm, Stirling (July 21st).

SWINE FEVER:

Berks.—Mousefield Farm, Long Lane, Newbury (July 19th).

Derbys.—The Farm, Milton (July 16th).

I. of Ely.—Westfields Farm, St. John's Road, Ely; Dovecote Upwell, Wisbech (July 19th).

Lancs.—Hare and Hounds Hotel, Upholland, Wigan; Ellis Fold Farm, Norden, Rochdale (July 17th); Bent Clough Farm, Farm Lane, Shawbridge, Colne; Pennington Mills, Mossley (July 20th).

Norfolk.—Hill House Farm, Boughton, King's Lynn (July 17th); Savers Farm, Barford, Norwich, Norfolk (July 21st).

Notts.—Hall Farm, Sookholme, Mansfield-Woodhouse; Dovedale, No. 1, Tennyson Avenue, Gedling (July 17th); Jordon Castle Farm, Wellow (July 18th).

Staffs.—The Bungalow, Nobut Road, Leigh, Stoke-on-Trent (July 16th); Woottons Farm, Rocester, Uttoxeter (July 17th); Nobut Hall Farm, Leigh, Stoke-on-Trent (July 19th).

Suffolk (W.).—Taylor's Farm, Kedington (July 17th).

Surrey.—Chillbrook Farm, Downside, Cobham; Kayscroft, Rabies Heath Road, Bletchingley, Redhill (July 20th).

Yorks (E.R.).—The Green, North Newbald (July 17th); 273, Main Road, Bilton, Hull (July 19th).

Yorks (W.R.).—53, Shepcote Lane Piggeries, Tinsley Park, Sheffield, 9; Kiln House Farm, Luddenden (July 16th); Shirland Piggeries, Sheffield (July 17th); Bridge Farm, Dewsbury Road, Leeds, 11.

* * * * *

PROPOSED "ST. FRANCIS NATIONAL ANIMAL CENTRE"

A number of animal lovers—including Lady Munnings, the Marquess of Donegall, and five Members of Parliament—were present at a meeting held at the House of Commons on July 11th to hear a proposal for the establishing of a St. Francis National Animal Centre.

The proposal was put forward by Mr. and Mrs. Peter Shaw Baker, editors of *Animal Life* magazine. In a short introductory speech Mr. Shaw Baker outlined the idea of the centre as "not only a plan to provide a better world for animals" but a permanent structure to carry on the teaching of St. Francis, that would bring freedom and justice to the lives of animals and happiness to the lives of men. Its aim would be to teach and explain, and make clear to every adult and every child, the true nature of animal life; to bring a real understanding of nature to every human being, and to present a vision of the world as St. Francis saw it, where man and animals are kin.

It was proposed to house in the centre permanent libraries of animal books and galleries of animal paintings and sculpture—including the headquarters of the recently formed Society of Animal Art, of which Sir Alfred Munnings is President—to give lectures, film shows and recitals on animal subjects and to maintain a comprehensive information bureau.

The St. Francis National Animal Centre Association of 51, Tothill Street, S.W.1, had already been formed by the founders and a £30,000 fund opened under the patronage of the Marquess of Donegall, Lord Dunsany and the Hon. Mrs. Ionides. Others who had sent messages of support for the idea were Dame Sybil Thorndike, Miss Yvonne Arnaud, Bishop Henry Wilson, Mr. Oliver G. Pike and Henry Williamson.

The centre would need a suitable building and the Association had already made enquiries about the 16th century Old Rectory House at Wimbledon, owned by Sir Geoffrey Peto, which with its beautiful rooms and gardens would be the perfect setting for a place that could become the Mecca of all animal lovers, not only in this country but from all over the world.

SOCIETY OF ANIMAL ART

Since the reference to the above-mentioned Society of Animal Art made in our issue of June 23rd, we have received enquiries concerning this body from interested readers. The aims of the Society are (*a*) "To encourage the many artists who interpret any form of animal life in terms of graphic art, sculpture or pottery, and to hold exhibitions of such work designed to interest the layman, student, naturalist and artist alike"; (*b*) "To promote a wider interest in natural life in general." Election to membership is by invitation or by general vote of the Committee on receipt of an application by an accepted exhibitor in at least one of the Society's exhibitions. The annual subscription is £3 3s. Further particulars may be obtained from the Founder and Hon. Secretary, Mr. Peter Shaw Baker, 51, Tothill Street, Westminster, London, S.W.1.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the N.V.M.A.

THE "NATURAL" APPROACH TO DISEASE

Sir,—An eminent biologist stated "Once you interfere with the laws of nature you never know where things will end." Unfortunately, I have been unable to trace the author's name, but it was quoted about 30 years ago by the famous surgeon the late Sir William Arbuthnot Lane. He also mentioned that in his experience the majority of diseases in the human subject were due to errors in diet.

I consider both remarks are applicable to diseases in animals at the present time.—Yours faithfully, A. HART, The Anchorage, Ardnadam, Dunoon, Argyll. *July 16th*, 1951.